SW VGA Series
VGA and Stereo Audio Switchers

SERIES FEATURES

- **Inputs:** Two, four, six, eight, and twelve input models with 15-pin HD connectors; 3.5 mm stereo mini jacks for audio

- **Output:** 15-pin HD connector for video; captive screw connector for audio

- **350 MHz (-3 dB) RGB video bandwidth**

- **Compatible with VGA-QXGA and HDTV component video signals**

- **Auto-input switching** — Automatically switches to the highest-numbered input with an active video signal.

- **Input signal sensing** — Automatically detects which inputs have an active signal and reports that information through the RS-232 port for confirmation of active inputs on third party control systems.

- **Switches balanced and unbalanced stereo audio**

- **Active PC audio buffering** — Converts unbalanced PC audio to balanced, line level signals, eliminating noise over long cable runs.

- **Compatible with Extron VSW I AAP** — The optional VSW I AAP provides remote input connection and selection, which is useful in multiple-participant presentation environments.

- **Multiple control options** — Switcher operations can be controlled through the front panel, RS-232, or contact closure.

- **IR control** — The SW VGA Series switchers can be conveniently controlled via IR remote control with the optional Extron IR 102 kit.

- **Internal universal power supply** — The 100-240VAC, 50/60 Hz, international power supply provides worldwide power compatibility.
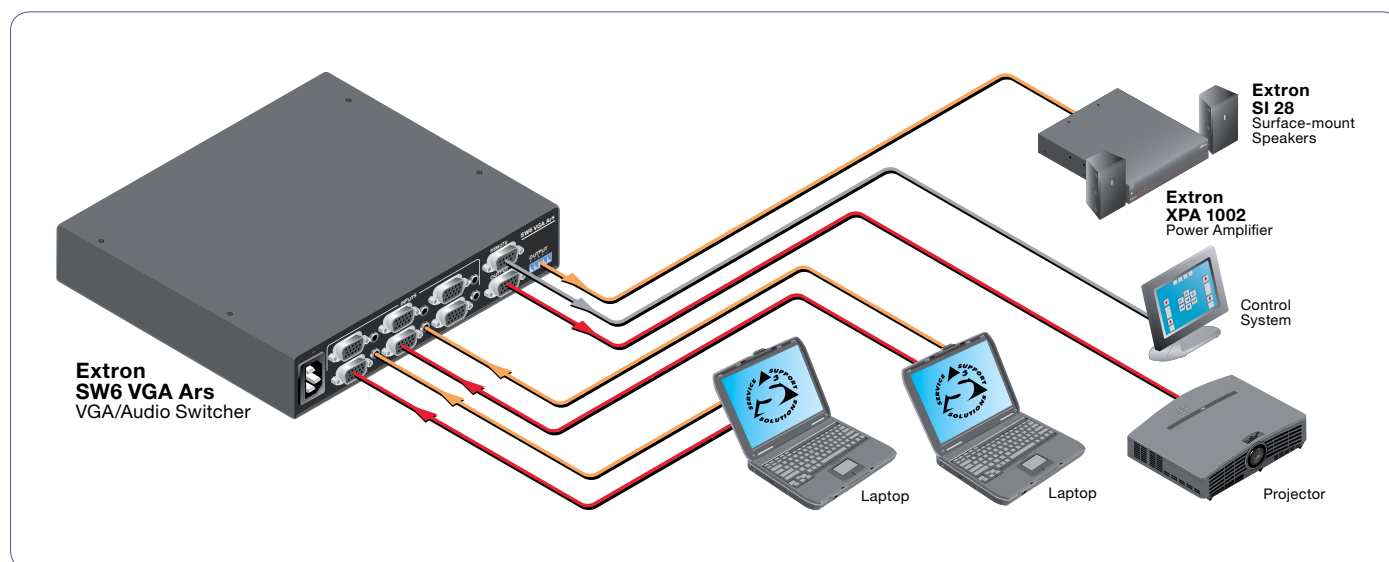
DESCRIPTION

The **SW VGA Series** are VGA switchers with two, four, six, eight, or twelve inputs. They are designed for applications where multiple high resolution computer video or HDTV component video signals must be switched to one or two displays. The SW VGA Series switchers are ideal for small to mid-sized applications where high resolution switching is needed. There are several key features common to all models in this series which benefit integrators and end-users alike.

All models feature input signal sensing, which automatically detects which inputs have an active signal and reports that information through the RS-232 port for confirmation of active inputs on third party control systems. This provides quick confirmation of active inputs on any third-party control system. Another feature common to all models is Auto-input switching, which automatically switches to the highest-numbered input with an active video signal. All switchers in this series can also be controlled via their front panel, RS-232, and contact closure remote control, and via the optional Extron IR 102 handheld remote control. All of the SW VGA models are housed in 1U, rack-mountable metal enclosures for easy integration into new or existing A/V environments.

All SW VGA Series switchers feature active PC audio buffering, which converts unbalanced PC audio to balanced, line level signals, eliminating noise over long cable runs. The switchers accept PC audio input on 3.5 mm mini stereo jacks for fast, easy connection with pre-terminated Extron VGA and audio cables. Balanced or unbalanced audio is output on captive screw connectors.

The SW8 VGA and SW12 VGA Series feature dual buffered video and audio outputs which simultaneously output program video and audio on two parallel outputs. This eliminates the additional cost of a VGA and audio distribution amplifier for dual-display applications.

Extron SW6 VGA Ars
VGA/Audio Switcher

Extron SI 28 Surface-mount Speakers

Extron XPA 1002 Power Amplifier

Control System

Laptop

Laptop

Projector

Extron®

SW VGArs
VGA Switchers

UNIQUE FEATURES

• Switches VGA-QXGA signals on 15-pin HD connectors

SW6 VGArs

MODEL	VERSION DESCRIPTION	PART #
SW2 VGArs	Two Inputs, One Output	60-257-02
SW4 VGArs	Four Inputs, One Output	60-258-02
SW6 VGArs	Six Inputs, One Output	60-259-02

SW VGA Ars
VGA and Stereo Audio Switchers

UNIQUE FEATURES

• Switches VGA-QXGA and stereo audio signals on 15-pin HD connectors and 3.5 mm stereo mini jacks

• Active PC audio to balanced audio interfacing

• Dual VGA outputs on two 15-pin HD connectors and dual outputs on two captive screw connectors - SW8 VGA Ars and SW12 VGA Ars only

SW12 VGA Ars

MODEL	VERSION DESCRIPTION	PART #
SW2 VGA Ars	Two Input VGA & Audio	60-257-22
SW4 VGA Ars	Four Input VGA & Audio	60-258-22
SW6 VGA Ars	Six Input VGA & Audio	60-259-22
SW8 VGA Ars	Eight Input VGA & Audio	60-902-21
SW12 VGA Ars	Twelve Input VGA & Audio	60-946-21

SW VGA Series Accessories

OPTIONAL ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
RSU 129	1U 9.5" Deep Universal Rack Shelf Kit	page 858	60-190-01
CCR 204	Four-Button Contact Closure Remote	page 286	60-794-02
CCR 306	Six-Button Contact Closure Remote	page 287	60-795-02
KP 6	Keypad Remote Control For Use With 9-pin Contact Closure Port	page 288	60-111-20
VSW I AAP	Remote Input and Control Panel AAP for VSW 2VGA A and SW VGA rs / VGA Ars Series Switchers	page 286	70-529-11
IR 102 Remote Control Kit	IR to RS-232 or Contact Closure Conversion Kit	page 280	70-224-01
CSR 6	Captive Screw to RCA Female Audio Adapter	page 834	26-575-01

Extron®

SW VGA Series

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	350 MHz (-3 dB)
Crosstalk	-68 dB @ 10 MHz

VIDEO INPUT

Number/signal type	2, 4, 6, 8, or 12 (depending on the model) VGA-QXGA RGBHV, RGBS, RGsB, RsGsBs computer video, and HDTV component video
Connectors	2, 4, 6, 8, or 12 female 15-pin HD
Nominal level	1.0 Vp-p for Y of component video
	0.7 Vp-p for RGB and for R-Y and B-Y of component video
Minimum/maximum levels	Analog: 0.3 V to 1.5 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz to 145 kHz
Vertical frequency	30 Hz to 170 Hz
Return loss	-40 dB @ 5 MHz
Input coupling	DC

VIDEO OUTPUT

Number/signal type

SW2/4/6 VGA Series	1 VGA-QXGA RGBHV, RGBS, RGsB, RsGsBs computer video, and HDTV component video (follows input type)
SW8/12 VGA Series	2 VGA-QXGA RGBHV, RGBS, RGsB, RsGsBs computer video, and HDTV component video (follows input type)

Connectors

SW2/4/6 VGA Series	1 female 15-pin HD
SW8/12 VGA Series	2 female 15-pin HD
Nominal level	1.0 Vp-p for Y of component video
	0.7 Vp-p for RGB and for R-Y and B-Y of component video
Minimum/maximum levels	0.3 V to 1.5 Vp-p (follows input)
Impedance	75 ohms
Return loss	-43 dB @ 5 MHz
DC offset	±5 mV with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs, bi-level and tri-level sync
Output type	RGBHV, RGBS, RGsB, RsGsBs, bi-level and tri-level sync (follows input)
Input level	1.0 V to 5.0 Vp-p
Output level	TTL: 5.0 Vp-p, unterminated
Input impedance	510 ohms
Output impedance	75 ohms

Max. propagation delay

SW2/4/6 VGA Series	47 ns
SW8/12 VGA Series	54 ns

Max. rise/fall time

SW2/4/6 VGA Series	4.2 ns
SW8/12 VGA Series	4.7 ns
Polarity	Positive or negative (follows input)

AUDIO — ARS AND A MODELS ONLY

Gain

SW2/4/6 VGA Series	Unbalanced output: +6 dB; balanced output: +12 dB
SW8/12 VGA Series	Unbalanced output: +0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±0.05 dB
THD + Noise	0.01% @ 1 kHz at nominal level
S/N	>90 dB at maximum output (unweighted)

Crosstalk

SW2/4/6 VGA Series	-45 dB @ 20 kHz, -72 dB @ 1 kHz or below 60 Hz
SW8/12 VGA Series	-45 dB @ 1 kHz, fully loaded

Stereo channel separation

SW2/4/6 VGA Series	>80 dB @ 20 Hz to 20 kHz
SW8/12 VGA Series	>80 dB 1 kHz

AUDIO INPUT — ARS AND A MODELS ONLY

Number/signal type	2, 4, or 6 (depending on the model) stereo, unbalanced
Connectors	2, 4, or 6 (depending on the model) 3.5 mm female stereo mini jacks; tip (L), ring (R), sleeve (Gnd)
Impedance	>10k ohms unbalanced, DC coupled
Nominal level	-10 dBV (316 mV)

Maximum level

SW2/4/6 VGA Series	+16 dBV, (unbalanced) at 1% THD+N
SW8/12 VGA Series	+14 dBV, (unbalanced) at 1% THD+N
	Input gain adjustment (SW 6 VGA A only)
	15.0 dB to +9.0 dB, adjustable per input

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT — ARS AND A MODELS ONLY

Number/signal type

SW2/4/6 VGA Series	1 stereo, balanced/unbalanced
SW8/12 VGA Series	2 stereo, balanced/unbalanced

Connectors

SW2/4/6 VGA Series	(1) 3.5 mm captive screw connector, 5 pole
SW8/12 VGA Series	(2) 3.5 mm captive screw connectors, 5 pole
Impedance	50 ohms unbalanced, 100 ohms balanced

Nominal level

SW2/4/6 VGA Series	+4 dBu (1.23 V), balanced
	-4 dBV (0.63 V), unbalanced
SW8/12 VGA Series	+4 dBu (1.23 Vrms), balanced
	-10 dBV (316 mVrms), unbalanced
	Variable output's volume range (SW8/12 VGA Series only)
	0 to 100 (-84 dB to 0 dB), default = 100 = 0 dB
	Gain error (SW8/12 VGA Series only)
	±0.1 dB channel to channel
Maximum level (Hi-Z)	+28 dBu, balanced; +20 dBV, unbalanced at 1%THD+N
Maximum level (600 ohm)	+21 dBm, balanced; +18 dBm, unbalanced at 1%THD+N

CONTROL/REMOTE — SWITCHER

Serial control port

SW2/4/6 VGA Series	RS-232, 9-pin female D connector (shared with contact closure)
SW8/12 VGA Series	RS-232, 9-pin female D connector
Baud rate and protocol	9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations	
	2 = TX, 3 = RX, 5 = GND
Contact closure	(SW2/4/6 VGA Series only)
	9-pin female D connector (shared with RS-232)
Contact closure	(SW2/4/6 VGA Series only)
	1 = input 1, 4 = input 2, 6 = input 3, 7 = input 4, 8 = input 5, 9 = input 6; active when a pin momentarily shorts to ground
"Show Me" contact closure	Pin 5 of each VGA input connector. The input is active (selected) when pin 5 momentarily goes to ground.
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™)

GENERAL

Power	100 VAC to 240 VAC, 50/60 Hz, 10 watts, internal
Temperature/humidity	Storage: -40 to +158 ℉ (-40 to +70 ℃) / 10% to 90%, noncondensing
	Operating: +32 to +122 ℉ (0 to +50 ℃) / 10% to 90%, noncondensing
Cooling	Convection, no vents

Mounting

Rack mount

SW2/4/6 VGA Series	Yes, with optional 1U, 9.5" deep rack shelf (RSU 129, #60-190-01; RSB 129, 60-604-01)
SW8/12 VGA Series	Yes, with included MBD 149 bracket kit, 70-077-03
Furniture mount	Yes, with optional under-desk mounting kit, part #70-077-01 (MBU 125), or through-desk mounting kit, part #70-077-02 (MBD 129)
Enclosure type	Metal
	Enclosure dimensions (Depth excludes connectors.)
SW2/4/6 VGA Series	1.75" H x 8.75" W x 9.5" D (1U high, half rack wide) (4.4 cm H x 22.2 cm W x 24.1 cm D)
SW8/12 VGA Series	1.75" H x 17.5" W x 9.5" D (1U high, full rack wide) (4.4 cm H x 44.4 cm W x 24.1 cm D) (Depth excludes connectors)

Product weight

SW2/4/6 VGA Series	2.5 lbs (1.1 kg)
SW8/12 VGA Series	6.3 lbs (2.9 kg)

Shipping weight

SW2/4/6 VGA Series	5 lbs (3 kg)
SW8/12 VGA Series	11 lbs (5 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)

Regulatory compliance

Safety	CE, C-tick, CUL, UL
Compliances	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

NOTE: All nominal levels are at ±10%.

NOTE: Specifications are subject to change without notice.